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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,258	03/29/2004	Yiou-Wen Cheng	250320-1090	2739

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EXAMINER	
LEE, PING	

ART UNIT	PAPER NUMBER
2615	

MAIL DATE	DELIVERY MODE
09/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/812,258	CHENG ET AL.	
	Examiner	Art Unit	
	Ping Lee	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/29/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7, 10, 12-18, 21, 23 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Lowe et al (hereafter Lowe) (US 5,436,975).

Regarding claim 1, Lowe discloses an apparatus for generating a stereo sound, comprising:

at least a direct sound positioner (the upper circuit as shown in Fig. 3 for generating 122 and 136) used to generate at least a direct sound signal after receiving an input sound channel;

at least a reverberation positioner (the lower circuit as shown in Fig. 3 for generating 164, 166 and 168) used to-generate at least a reverberation direction signal after receiving the input sound channel;

at least a first sound integrator (68, 74) used to receive the direct sound signal and output an integrated direct sound signal;

at least a second sound integrator (50, 52) used to receive the reverberation direction signal and output an integrated reverberation direction signal;

at least a reverberation generator (58, 62) used to receive the integrated reverberation direction signal and output a reverberation signal; and

at least a space processor (36, 76, 78) used to receive the integrated direct sound signal and the-reverberation signal and output the stereo sound for a user.

Regarding claim 2, Lowe shows that the direct sound positioner (in Fig. 3) generates a right direct sound signal or a left direct sound signal.

Regarding claim 5, Lowe shows in Fig. 1 that the first sound integrator (74) is a right sound integrator used to receive the right direct sound signal generated by the direct sound positioner to output an integrated sound signal, the integrated sound signal being an integrated right direct sound signal.

Regarding claim 3, Lowe shows in Fig. 3 that the reverberation direction signal generated by the reverberation positioner is a right reverberation direction signal or a left reverberation direction signal.

Regarding claim 4, Lowe shows in Fig. 1 that the first sound integrator (68) is a left sound integrator used to receive the left direct sound signal generated by the direct sound positioner to output an integrated sound signal, the integrated sound signal being an integrated left direct sound signal.

Regarding claim 6, Lowe shows that the second sound integrator (50) is a left sound integrator used to receive the left reverberation direction signal generated by the reverberation positioner to output an integrated sound signal, the integrated sound signal being an integrated left reverberation direction signal.

Regarding claim 7, Lowe shows that the second sound integrator (52) is a right sound integrator used to receive the right reverberation direction signal generated by

the reverberation positioner to output an integrated sound signal, the integrated sound signal being an integrated right reverberation direction signal.

Regarding claim 10, Lowe shows that the space processor is used to perform a timing control and adjust a mixed volume of the signals output from the sound integrators (col. 4, lines 20-38).

Claims 12-18 and 21 specify a method corresponding to the apparatus as specified in claims 1-7 and 10 as discussed previously.

Regarding claims 23 and 25, Lowe further shows that the claimed "a plurality of sound channel" corresponds to the plurality of sound source inputs applied to the positioners (38, 80, 86).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 8, 9, 11, 19, 20, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lowe '975 in view of Lowe et al (hereafter Lowe '799) (US005371799A).

Regarding claims 8, 9,11, 19, 20, 22 and 24, Lowe '975 teaches a general reverberator and early reflection generator, but fails to explicitly disclose the design for the reverberator (62) and the early reflection generator (58) using FIR. One skilled in the art would have expected that any specific design, including the those using FIR filters, could be used without generating any unexpected result. In the same field of endeavor, Lowe '799 teaches that FIR filters could be used for simulating the early reflection and reverberation (col. 3, lines 46-50). Thus, it would have been obvious to one of ordinary skill in the art to modify Lowe '975 in view of Lowe '799 by utilizing FIR filters for generating the reverberation and early reflection.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ping Lee whose telephone number is 571-272-7522. The examiner can normally be reached on Monday, Wednesday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ping Lee
Primary Examiner
Art Unit 2615

pwl